Daily Diary Report by Bid Item

Contract No.: **04-0120F4**

Diary #: **572** **Const Calendar Day:** 975 **Date:** **10-May-2012** **Thursday**
Inspector Name: **Bruce, Matt** **Title:** **Transportation Engineer**
Inspection Type: Intermittent
Shift Hours: 09:30 pm 09:00 am **Break:** 00:30 **Over Time:** 03:00
Federal ID:
Location:
Reviewer: **Schmitt, Alex** **Approved Date:** **Status:** Submit

04-0120F4
04-SF-80-13.2/13.9
Self-Anchored
Suspension Bridge

Weather

Temperature **7 AM** 60 - 70 **12 PM** 70 - 80 **4PM** 70 - 80
Precipitation 0.00" **Condition** Mostly sunny to clear

Working Day ☐ If no, explain:

Diary: Dispute ☐

Work description.

- Called ABF survey party chief Dave Adams earlier in the evening to inform him of the disagreement for the top dead center marks placed at the 1.5m offsets for the following cable bands:

40U, 40D, 38U, 36U, 34U, 34D, 32U, 26D, 24D, 18U, 18D, 16U, 10U

In order to expedite the approval of the layout marks we agreed to resolve the issue in the early morning at 5:00am Friday May 11th. The time of sunrise per weather.com is 6:03am. While laying out the top dead center marks yesterday morning May 9th, one theory for the discrepancies is different measured cable diameters due to proud wires altering the caliper bite on the cable section. Also it is difficult to measure and place marks up near the tower due to the severe slope of the sidespan catwalk.

- The initial plan for this evening prior to correcting South Sidespan Top Dead Center marks was to use GPS to check the 1.5m offset points on the North Main/Sidespans. The Planetary Index (K-value) was at 4 or hovering around that number, therefore the survey was postponed for another date. Instead myself and Victor worked on outstanding diaries and cable band layout inspection paperwork.

- The shift worked by Victor Altamirano, David Chung, and myself started on Thursday evening May 10th and was completed Friday morning May 11th. All three of us verified the South Sidespan Top Dead Center corrected marks placed by ABF surveyors this morning starting at 5:30am to complete while the steel and ambient temperatures were equalized. The ABF surveyors remarked the top dead center for 13 marks that were out of tolerance. The top dead center layout corrections were completed at 6:20am, where the sunrise time today per weather.com was 6:03am. The informal tolerance that we have been using is 6mm out of plumb in either direction. The following is a summary of the South Sidespan Top Dead Center mark measurements taken in millimeters by Caltrans:

1.5m offset	May 10th	May 11th
40 - Uphill	15 CC	3 CC
40 - Downhill	15 CC	0 Plumb
38 - Uphill	9 CC	1 CC
36 - Uphill	9 CW	5 CW
34 - Uphill	8 CC	2 CC
34 - Downhill	8 CC	5 CW

32 - Uphill	8 CW	2 CC
26 - Downhill	10 CW	2 CW
24 - Downhill	10 CC	3 CC
18 - Uphill	9 CW	2 CC
18 - Downhill	8 CW	1 CC
16 - Uphill	8 CC	4 CW
10 - Uphill	9 CW	1 CW

CC = Counterclockwise looking east
CW = Clockwise looking east

The South Sidespan cable band centerline, and the top dead center marks at the 1.5m offset from the centerline are acceptable. Even though the sun was rising on us while correcting the top dead center marks, the ambient and steel temperatures were still equalized. As myself and ABF surveyor James Allen were checking the marks, it was seen that our measurements held true as the marks needed to be corrected. We also compared measured compacted cable diameters as we more or less agreed everytime. Another critical observation from working with the ABF surveyors was the accuracy of using the tree calipers and torpedo level to mark top dead center. It is imperative to ensure that the tree calipers are not skewed and are normal to the cable cross-section at the 1.5m offset. The modified tree calipers that I am using has a flat plate to ensure proper caliper bearing and bite. Also the flat plate sets the tree calipers normal to the cable cross section. This was the same issue seen while measuring adjusted cable strands. In my opinion the tree calipers are not a good tool for taking measurements on the PWS cable at any stage except for compaction.

Victor, David, and myself also rechecked the uphill top dead center marks for North Sidespan 1.5m offsets 14, 24, and 34. Similarly the uphill top dead center marks for North Mainspan 1.5m offsets 52, 56, 68, 80, 92, 106 were rechecked. After this first remeasurement it was observed that there was minimal movement of the cable from top dead center due to thermal effects. The difference between the top dead center marks is likely a slight difference in the actual measurement. All of this work was done between 3:30am and 4:30am Friday May 11th.

The future plan is to take additional Top Dead Center (TDC) measurements at these locations during the warmest times of the day, after additional cable band placement, suspender connection to the cable, before and after load transfer to observe the top dead center change in the cable.

Victor, David and myself left the jobsite at 8:00am at which time I informed Doug of the situation and what needed to be checked and approved. The ABF surveyors were marking the 1.5m offset circumference lines, rotational camber arcs, and rotational camber centerlines on the South Sidespan from approximately 6:45am to 12:00pm.

- Wrote an email to pertinent Team Cable members briefing them on the status of the cable band layout as it pertains to cable band placement/erection during the day.

- Completed the inspection checklist for the Top Dead Center marks for the North Main/Sidespan and South Sidespan cable bands mentioned above.